Claims

1. Method for controlling an internal combustion engine having a camshaft (36) whose phase can be adjusted with respect to a crankshaft (21) by means of a setting mechanism (37), having a crankshaft sensor (22) which senses the crankshaft angle (CRK) and having a camshaft sensor (36a) which senses the camshaft angle (CAM), comprising the following steps:
- a reference value (PH_AD) for the phase is adapted in a predefined position of the setting mechanism (37) when a predefined condition is satisfied,
- a measurement value (PH_S) for the phase is determined depending on the sensed crankshaft angle (CRK) and camshaft angle (CAM),
- a corrected measurement value (PH_AKT) for the phase is determined depending on the reference value (PH_INI) and the measurement value (PH_S) for the phase,
- a control signal (SG) for controlling the internal combustion engine is determined depending on the corrected measurement value (PH_COR).

2. Method according to Claim 2, characterized in that the predefined condition is satisfied when a motor vehicle in which the internal combustion engine can be located has traveled a predefined journey distance (DIST) since the last adaptation and predefined ambient conditions are present.

3. Method according to Claim 2, characterized in that the ambient conditions are present when the temperature of the internal combustion engine lies within a predefined range.

4. Method according to one of the preceding Claims, characterized in that the adaptation takes place near to the time when the internal combustion engine starts up.

5. Method according to one of the preceding Claims, characterized in that the adaptation takes place depending on a variable which is characteristic of the load on the internal combustion engine.

6. Method according to Claim 5, characterized in that the variable which is characteristic of the load on the internal combustion engine is the journey distance (DIST).

7. Method according to one of Claims 5 or 6, characterized in that the variable which is characteristic of the load on the internal combustion engine is a variable which is characteristic of the full-load accelerations.

8. Method according to one of Claims 5 to 7, characterized in that the variable which is characteristic of loads on the internal combustion engine is a variable which is characteristic of the uneven running state.

9. Method according to one of Claims 5 to 8, characterized in that the variable which is characteristic of the load on the internal combustion engine is the period of operation (LT) of the internal combustion engine.

10. Method according to one of the preceding Claims, characterized in that diagnostics are performed on the internal combustion engine depending on the adapted reference value (PH_AD) or a value defining the adaptation.